

Work Order ID: 64476

December 6, 2010 1:08:33 PM

PRELIMINARY ISSUE

Page 1

Item ID: D350-748-241TRN

Accept

Revision ID:

Item Name: Crosstube Turning Detail

Setup Start

Stop

Start Date: 12/06/10 Start Qty: 1.00

Required Date: 12/10/10 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan: *u*

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

Draw Nbr

Revision Nbr

D350-748-241

Rev E

100

0.00

*10.12.16**1*

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs on both ends as per Folio FA647
2-Turn first side as per Folio FA647
3- File transition lines smooth.

110

0.00

*10.12.16**1*

QC1- Inspect dimensions to dimension sheet

Memo

0.00

QC

Quality Control

1.5 Turn Center Section As per Dwg.

120

0.00

*10.12.16**1*

MORI SEIKI CNC LATHE LARGE

Memo

0.00

Mori Seiki

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA647
2- File transition lines smooth.
3-Scribe part # as per Dwg D350-748-241

Work Order ID 64476

December 6, 2010 1:08:33 PM

Page 2

Item ID: D350-748-241TRN

Accept

Revision ID:

Item Name: Crosstube Turning Detail

Start Date: 12/06/10 Start Qty: 1.00

Required Date: 12/10/10 Req'd Qty: 1.00

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

150

Large Fab

0.00



Crosstubes

Memo

0.00

Crosstubes

Grind machining marks.

DP
SAD

11-1-18

11.01.20

Work Order ID 64476

December 6, 2010 1:08:34 PM



Page 3

Item ID: D350-748-241TRN

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Turning Detail

Start Date: 12/06/10 Start Qty: 1.00



Cust Item ID:

Required Date: 12/10/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Code Accept Qty Reject Qty Reject Number Insp. Stamp

160

Outsource process - Heat Treat

0.00



Outsource1

Memo

0.00

Outsource process - Heat Treat

Issue P/O: 13337
Heat Treat to min 180 KSI As per Dwg D350-748-241
Sand Blast tube after Heat Treat
Possible Supplier: Vac Aero
Ensure Certificate of Conformity is attached

CL 11/01/21 ①

170

Receive & Inspect for Damage & Mat'l Certs

0.00



Packaging

Memo

0.00

Packaging

Ensure certificate of conformaty is attached

12/4/3/10 ①

180

QC6- Inspect dimensions to drawing

0.00 - inspected to heat treating
specs in Rev A



QC

Memo

0.00

Quality Control

Dry only
Subonly

Work Order ID 64476

December 6, 2010 1:08:34 PM



Page 4

Item ID: D350-748-241TRN

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Turning Detail

Start Date: 12/06/10 Start Qty: 1.00



Required Date: 12/10/10 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

0.00



Packaging

Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack
Location: 4/6

DP

11-4-9

200

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/4/11

11-04-11

POSITIVE RECALL

EFFECTIVE 12/20

AUTH

RELEASED

DATE

11.04.11

Picklist Print

December 6, 2010 1:08:32 PM

Page 1

Work Order ID: 64476

Parent Item: D350-748-241TRN

Parent Item Name: Crosstube Turning Detail



Start Date: 12/06/10

Required Date: 12/10/10

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 08-03-06 DD verified by:ec
IPP Rev B Removed polish 08.04.02 EC verified by : DD
IPP Rev C Removed LPS-3 08.06.23 Ec verified by: DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6018-125

Manufactured

No

120

Each

38.0000

1

1



Crosstube Material

Location

Loc Qty

Loc Code

LG

38

32913

38

6015125

61380 ✓ (x-1)

CY 11/03/02

DART AEROSPACE LTD		Work Order:	
Description: Crosstube Assembly (AS350/355 High Aft)		Part Number:	D350-748-241
Inspection Dwg: D350-748-241 Rev: <i>D PA1</i>		Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

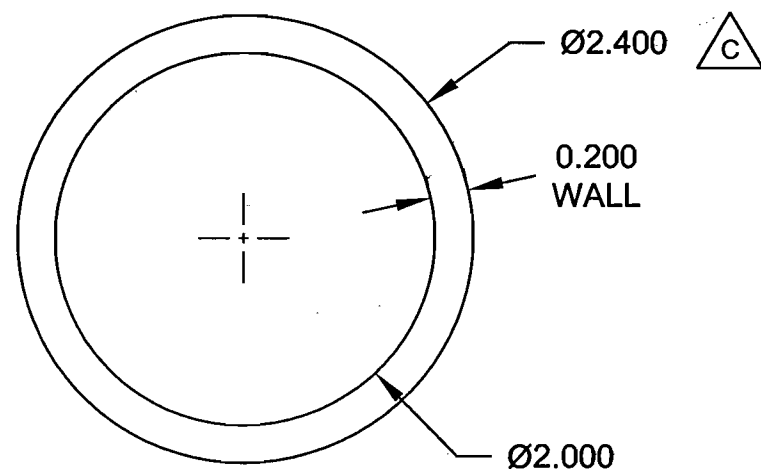
☒ First Article ☐ Prototype

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.244	/	/	VIA RD-02 c11	
	2.180	+0.005/-0.000	2.183	/	/		
	2.180	+0.005/-0.000	2.183	/	/		
	2.208	+0.005/-0.000	2.212	/	/		
	2.234	+0.005/-0.000	2.238	/	/		
	2.253	+0.005/-0.000	2.255	/	/		
	2.272	+0.005/-0.000	2.275	/	/		
	2.299	+0.005/-0.000	2.304	/	/		
		+0.005/-0.000					
	0.063	+/-0.010	.063	/	/		
	4.26	+/-0.030	4.27	/	/		
	R0.063	+/-0.010	.063	/	/		
	R0.50	+/-0.030	.500	/	/		
SIDE B	2.240	+0.005/-0.000	2.244	/	/		
	2.180	+0.005/-0.000	2.183	/	/		
	2.180	+0.005/-0.000	2.183	/	/		
	2.208	+0.005/-0.000	2.212	/	/		
	2.234	+0.005/-0.000	2.237	/	/		
	2.253	+0.005/-0.000	2.255	/	/		
	2.272	+0.005/-0.000	2.275	/	/		
	2.299	+0.005/-0.000	2.304	/	/		
		+0.005/-0.000					
		+0.007/-0.000					
	0.063	+/-0.010	.063	/	/		
	4.26	+/-0.030	4.27	/	/		
	R0.063	+/-0.010	.063	/	/		
	R0.50	+/-0.030	.500	/	/		
	122.70	+/-0.060	122.730	/	/	RD-14	

Measured by: <i>[Signature]</i>	Audited by: <i>[Signature]</i>	Prototype Approval:	N/A
Date: 10-12-16	Date: 10/12/16	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue (P/O D350-748-201)	KJ/JLM	

SPECIFICATION CONTROL DRAWING



NOTES

1) D6015-XXX CROSSTUBE
LENGTH

WHERE XXX IS LENGTH IN INCHES
EG. 125" LONG TUBE: D6015-125

2) MATERIAL: AISI 4130 (AMS 6371) SEAMLESS STEEL TUBE
2.400 OD x 2.000 ID
ANNEALED

3) TOLERANCES ARE PER ASTM A519 AS FOLLOWS:

O.D.: +0.007/-0.000

I.D.: +0.000/-0.007

LENGTH: XXX +0.188/-0.000

STRAIGHTNESS: 0.010" DEVIATION / 12" LENGTH

4) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

PRELIMINARY ISSUE

Rev. PC1

10.12.02

PC	2.400 WAS 2.500 (C5-1), ODxID WAS ODxWALL (A8-1)	CP	10.11.23
B	REMOVE "NORMALIZED"	CP	06.06.30
A	NEW ISSUE	CP	06.04.18
REV.	DESCRIPTION	BY	DATE
DESIGN	92	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	92		
CHECKED	92	DRAWING NO.	REV. A
MFG. APPR.	92	D6015	SHEET 1 OF 1
APPROVED	92	TITLE	SCALE
DE APPR.	92	CROSSTUBE MATERIAL	NTS
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

Item	Qty -241	Part Number	Description
1	X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D6015-125	CROSSTUBE (OR D6018-125)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6018-125
FINISHED LENGTH = 122.700±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-241" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 29.85 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT ALL EDGES FROM MACHINING
LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER
BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO
VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE,
CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

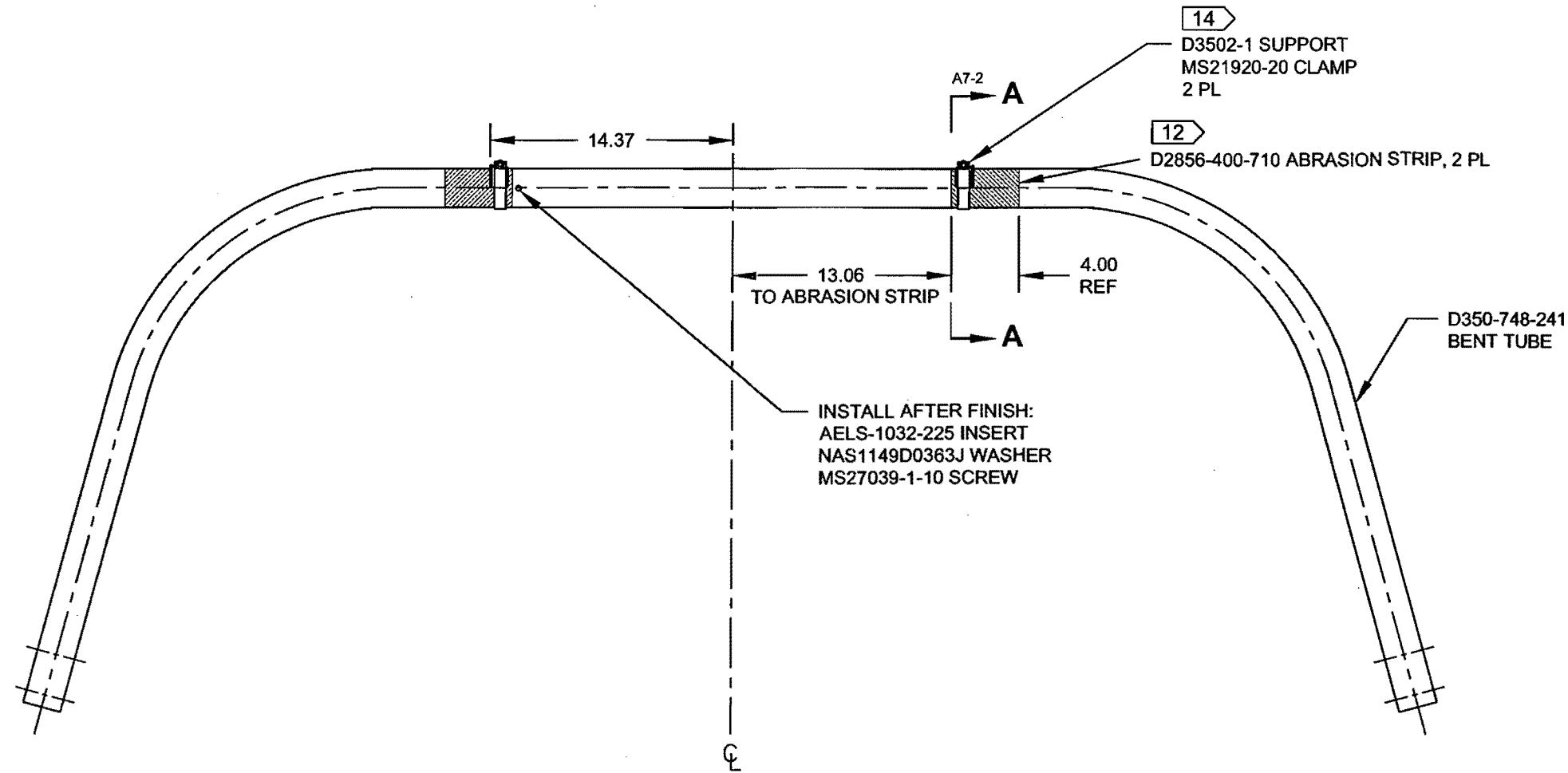
PRELIMINARY ISSUE

Rev PFI

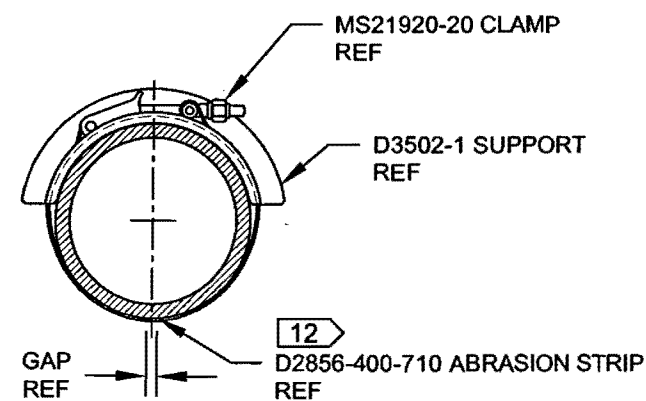
10.12.02

PFI	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A8-3); ADD TOLERANCES (ZN C6-3, D2-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6018-125 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	DP	DART AEROSPACE LTD	
DRAWN	DP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	DP	DRAWING NO.	REV. PFI
MFG. APPR.	DP	D350-748-241	SHEET 1 OF 4
APPROVED	DP	TITLE	SCALE
DE APPR.	DP	CROSSTUBE (AS 350/355 HI AFT)	NTS
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8 7 6 5 4 3 2 1



**D350-748-241
ASSEMBLY DETAIL**

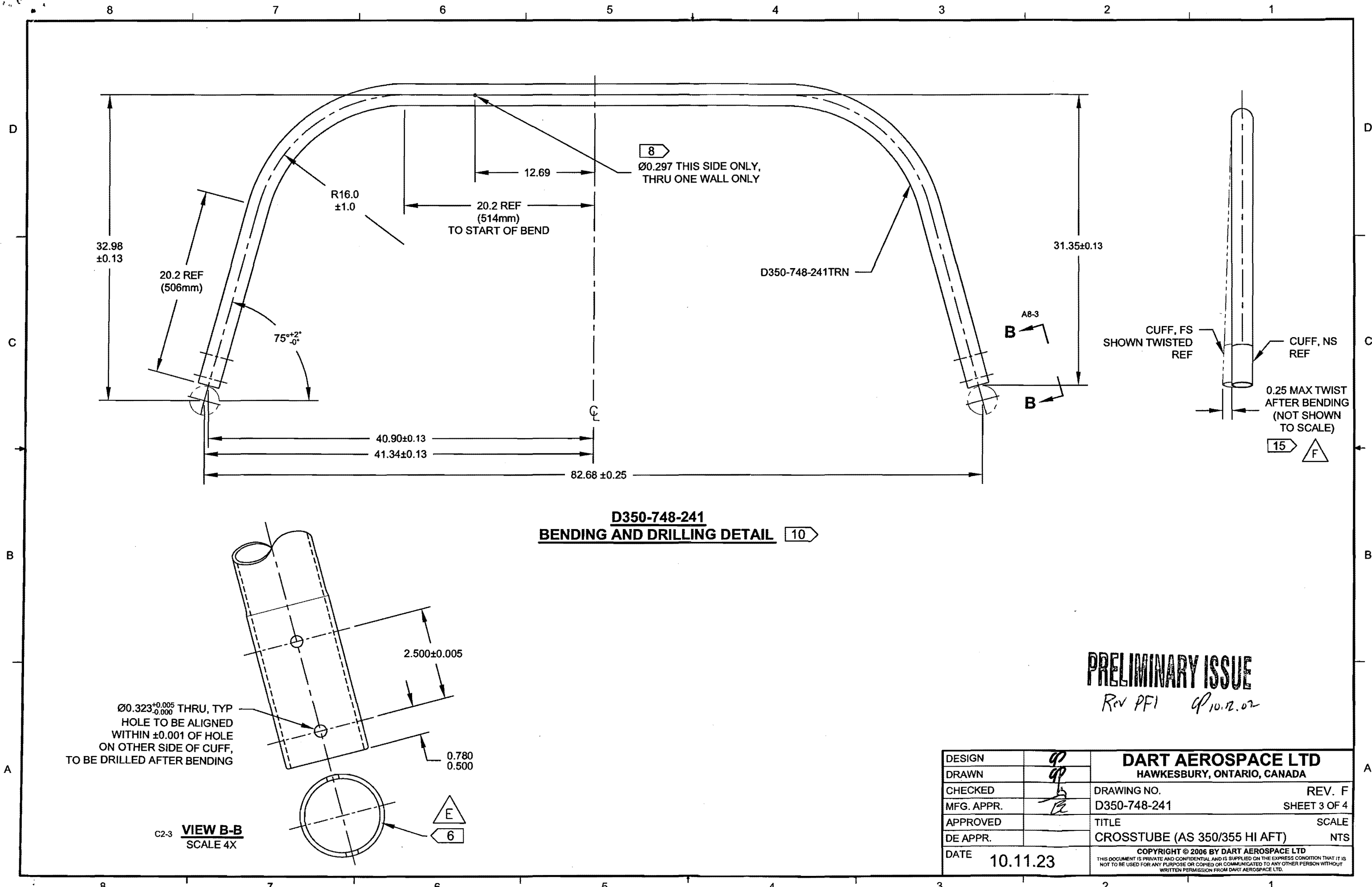


SECTION A-A D4-2
SCALE 4X

PRELIMINARY ISSUE
Rev PFI 10.12.02

DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	13	DRAWING NO.	REV. F
MFG. APPR.	13	D350-748-241	SHEET 2 OF 4
APPROVED	14	TITLE	SCALE
DE APPR.	14	CROSSTUBE (AS 350/355 HI AFT)	NTS
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8 7 6 5 4 3 2 1



D350-748-241
BENDING AND DRILLING DETAIL 10

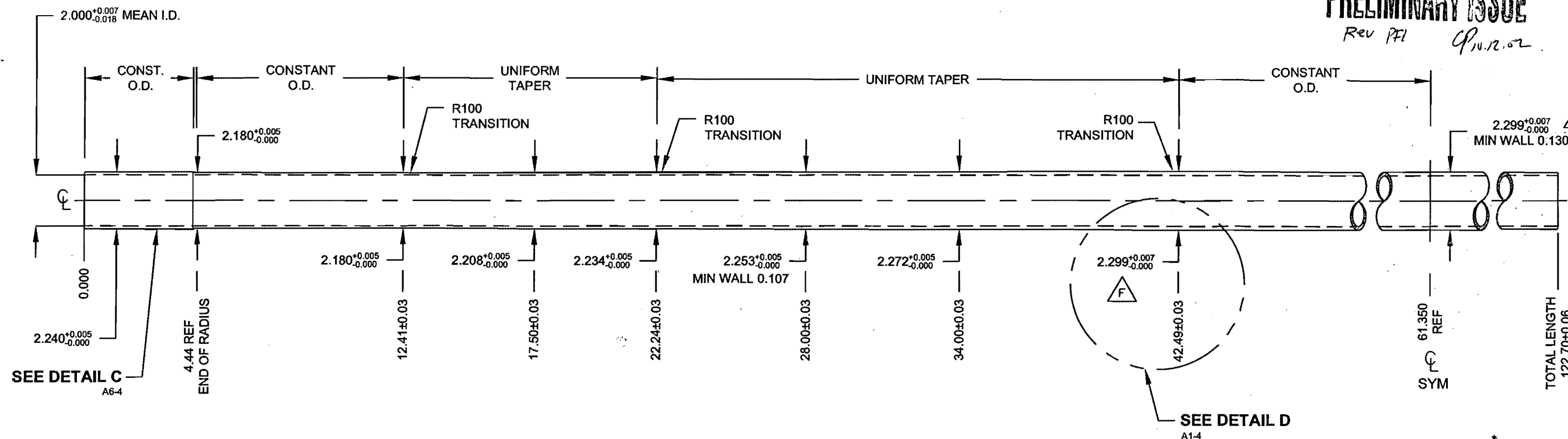
PRELIMINARY ISSUE

Rev PFI 10.12.02

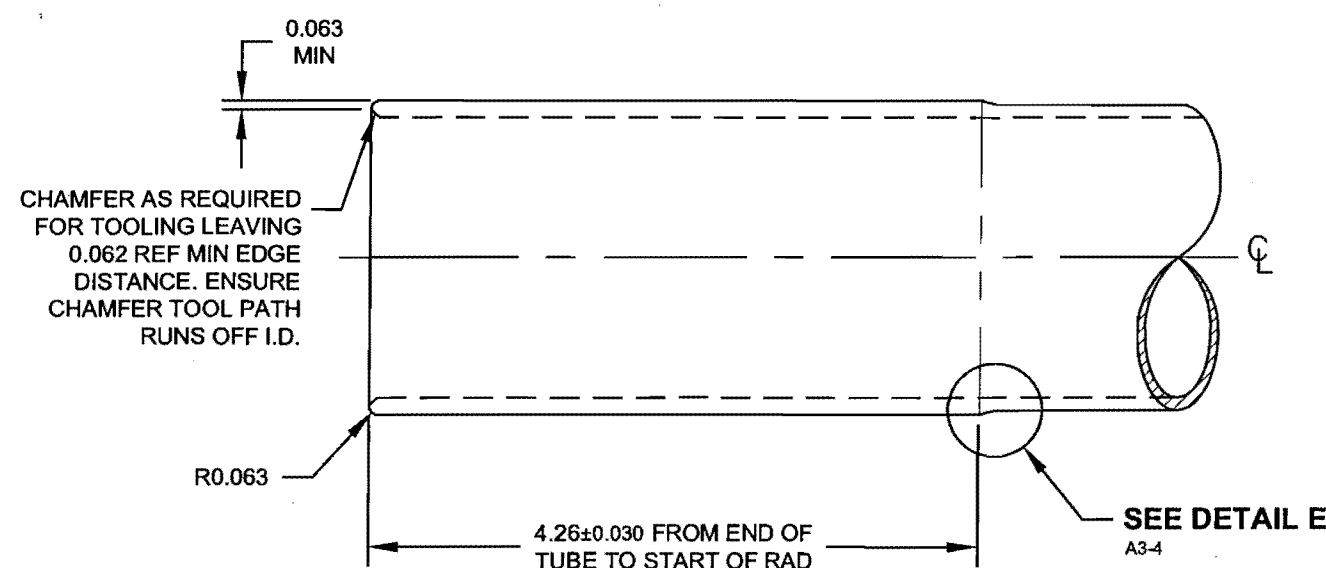
DESIGN	92	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	92		
CHECKED	h	DRAWING NO.	REV. F
MFG. APPR.	R	D350-748-241	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI AFT)	NTS
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PRELIMINARY ISSUE

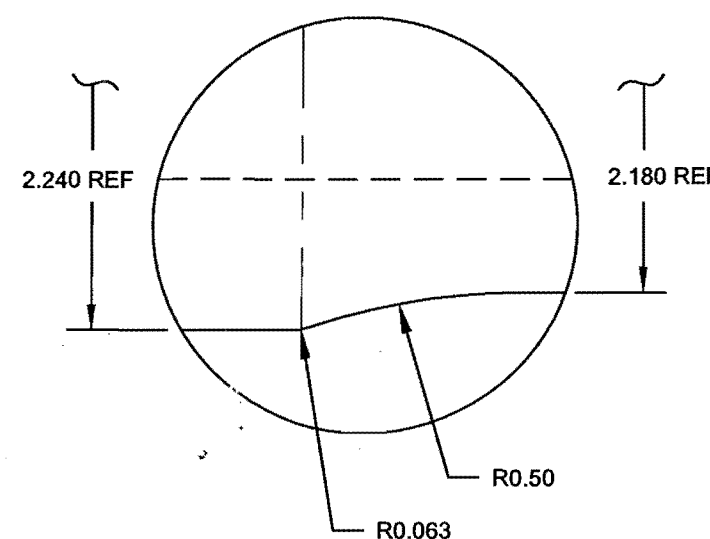
Rev PFI 09.12.02



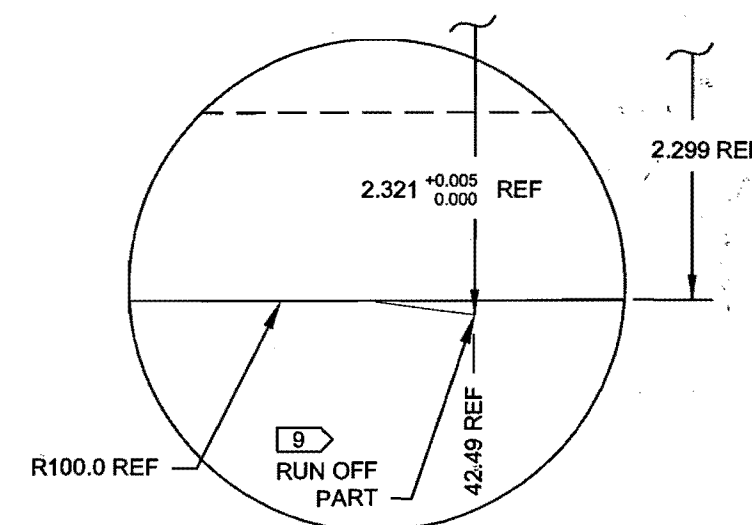
**D350-748-241TRN
TURNING DETAIL**



**DETAIL C:
CROSSTUBE CUFF** C8-4
SCALE 3X

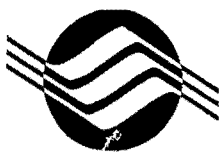


**DETAIL E:
CUFF TRANSITION** A5-4
NOT TO SCALE



**DETAIL D:
TAPER RUN-OFF** C3-4
NOT TO SCALE

DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	92	DRAWING NO.	REV. F
MFG. APPR.	92	D350-748-241	SHEET 4 OF 4
APPROVED	92	TITLE	SCALE
DE APPR.	92	CROSSTUBE (AS 350/355 HI AFT)	NTS
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VAC AERO
INTERNATIONAL INC.

PACKING SLIP

OAK 126770-1



HEAD OFFICE
1371 SPEERS ROAD, OAKVILLE, ONTARIO
CANADA L6L 2X5
TEL: (905) 827-4171 FAX: (905) 827-7489



QUEBEC DIVISION
7450 RUE VERITE STREET, ST. LAURENT, QUÉBEC
CANADA H4S 1C5
TEL: (514) 334-4240 FAX: (514) 334-6269

GST No.: R105468102

02/25/2011

MM / DD / YYYY

PAGE: 1

1DAR01

BILL TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

SHIP TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
02/25/2011		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
13337		NET 30 DAYS

LN	PART NO	DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	B/O QTY
01	D350-748	-241TRN, 141TRN	EA	3	3	0
		Process Specifications: Procedure: 4353 HEAT TREATED TO 180 KSI MIN. PER AMS 2759-1E 100% HARDNESS CHECKED AS PER ASTM E-18: 40/45 HRC MATERIAL: 4130 GRIT BLASTED P/N D350-748-141TRN, W/O 64475 P/N D350-748-241TRN, W/O 64476 P/N D350-748-141TRN, W/O 64890				
02	MC	MINIMUM CHARGE		1	1	0
03	GB	GRIT BLASTING		1	1	0

*Subonly
to Rev & Day*

No claims for shortage in weight or count will be entertained, unless presented within 5 working days after receipt of materials by customer.



METAL TREATING INSTITUTE



VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT
TURBINE COMPONENT OVERHAUL · PLASMA AND OTHER COATINGS



VAC AERO
INTERNATIONAL INC.

RELEASE NOTE

GST No.: R105468102

OAK 126770-1



HEAD OFFICE
1371 SPEERS ROAD, OAKVILLE, ONTARIO
CANADA L6L 2X5
TEL: (905) 827-4171 FAX: (905) 827-7489



2009 WYECROFT ROAD, UNIT B
OAKVILLE, ONTARIO
CANADA L6L 6J4
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CANADA H4S 1C5
TEL: (514) 334-4240 FAX: (514) 334-6269

02/25/2011

MM / DD / YYYY

PAGE: 1

1DAR01

BILL TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

SHIP TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON.

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
02/25/2011		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
13337		NET 30 DAYS

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D350-748	-241TRN, 141TRN	EA	3	3	
	Process Specifications: Procedure: 4353 HEAT TREATED TO 180 KSI MIN. PER AMS 2759-1E 100% HARDNESS CHECKED AS PER ASTM E-18: 40/45 HRC MATERIAL: 4130				
	GRIT BLASTED				
	P/N D350-748-141TRN, W/O 64475 P/N D350-748-241TRN, W/O 64476 P/N D350-748-141TRN, W/O 64890				

100% HARDNESS TESTED

3 pss.

44/45 HRC



I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.



METAL TREATING INSTITUTE

[Signature]
Authorized Q.C. Inspector



Accredited
Nadcap
Heat Treating • Welding

VACUUM BRAZING • HEAT TREATING • SPECIAL PROCESSING • FURNACE EQUIPMENT
TURBINE COMPONENT OVERHAUL • PLASMA AND OTHER COATINGS

Item	Qty -241	Part Number	Description
1	X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
2	1	D6015-125	CROSSTUBE (OR D6018-125)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

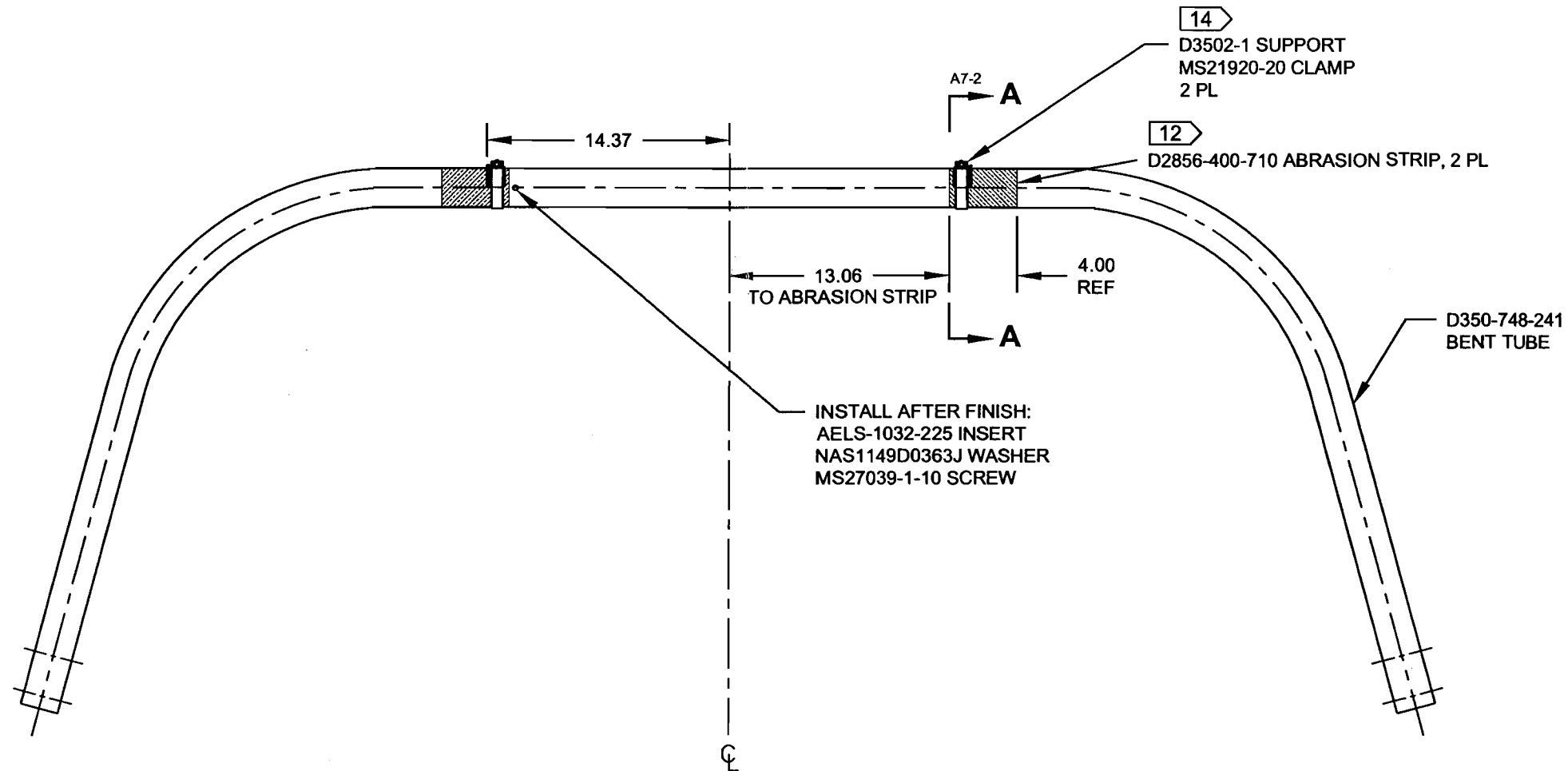
GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6018-125
FINISHED LENGTH = 122.700±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-241" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 29.85 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT ALL EDGES FROM MACHINING
LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER
BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO
VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE,
CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

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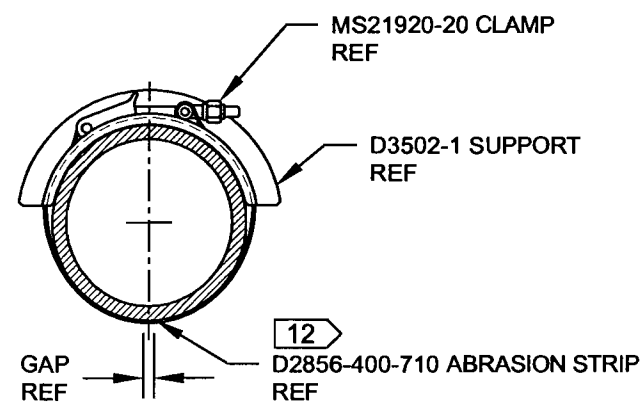
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F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A8-3); ADD TOLERANCES (ZN C6-3, D2-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6018-125 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	qp	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	qp		
CHECKED	h	DRAWING NO.	REV. F
MFG. APPR.	h	D350-748-241	SHEET 1 OF 4
APPROVED	h	TITLE	SCALE
DE APPR.	h	CROSSTUBE (AS 350/355 HI AFT)	NTS
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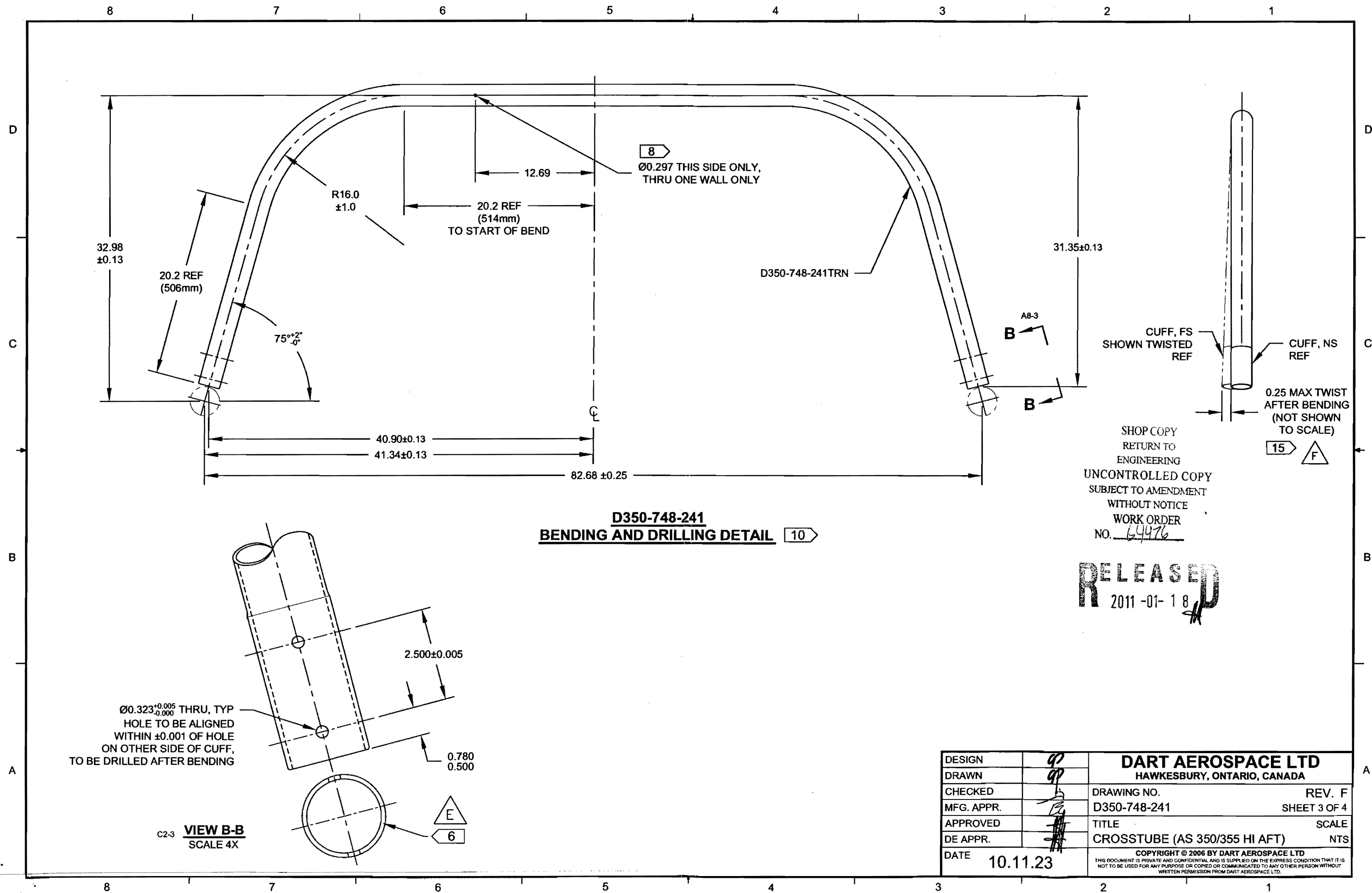
**D350-748-241
ASSEMBLY DETAIL**



SECTION A-A D4-2
SCALE 4X

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MFG. APPR.	12	D350-748-241	SHEET 2 OF 4
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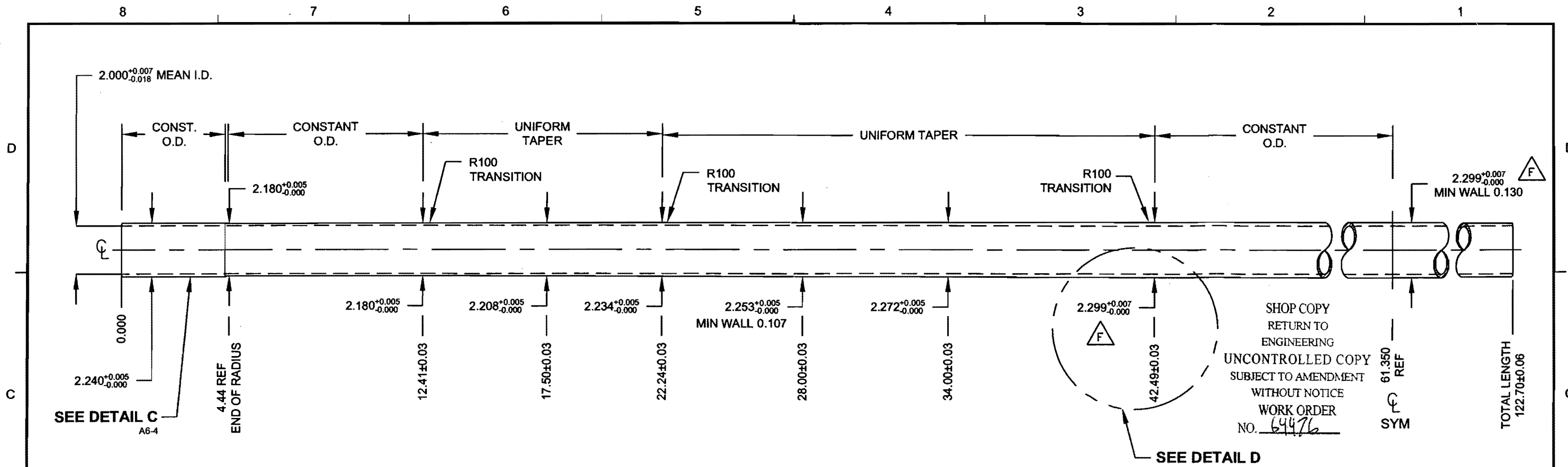


D350-748-241
BENDING AND DRILLING DETAIL 10

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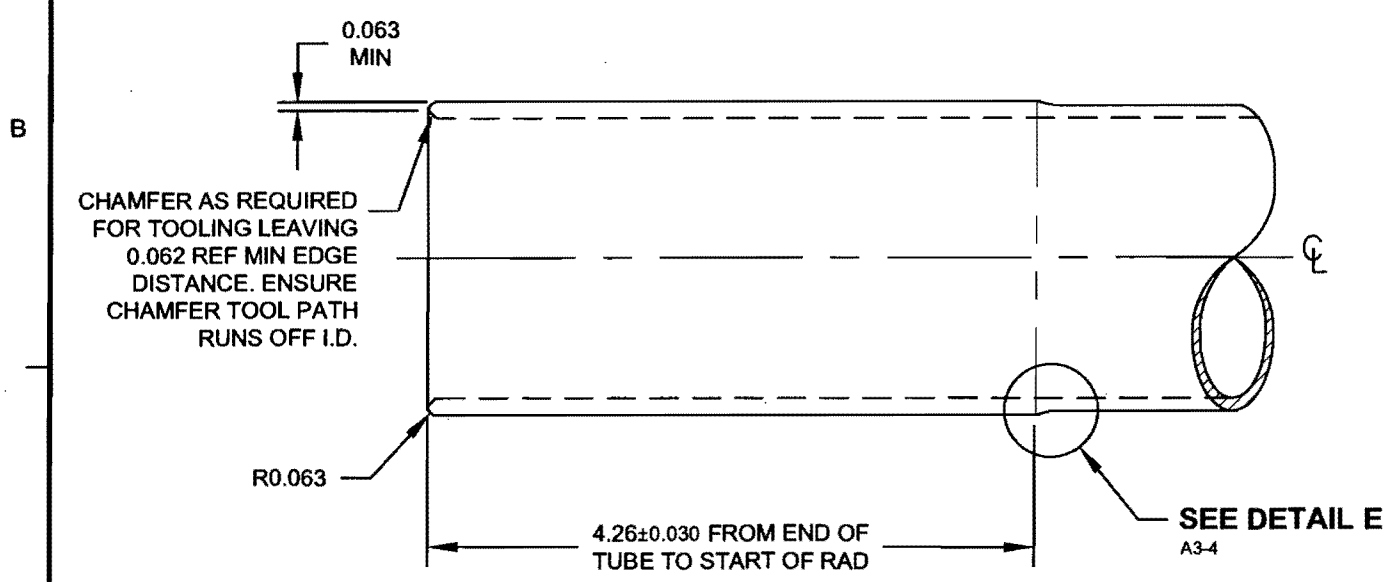
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MFG. APPR.		D350-748-241	SHEET 3 OF 4
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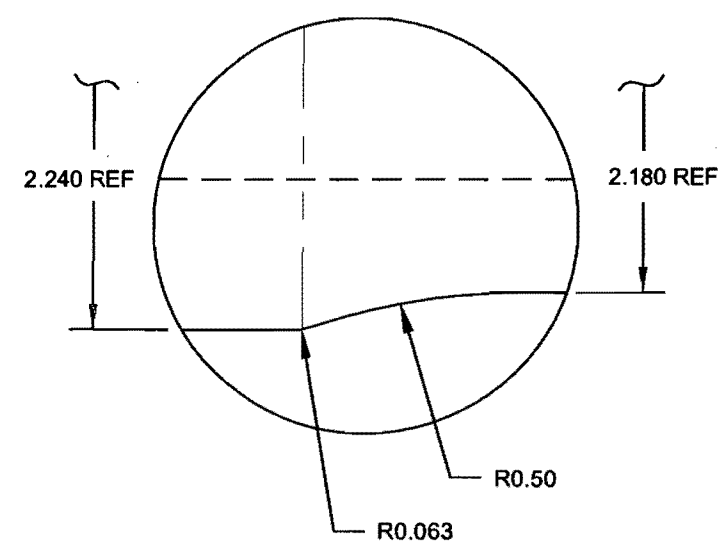


**D350-748-241TRN
TURNING DETAIL**

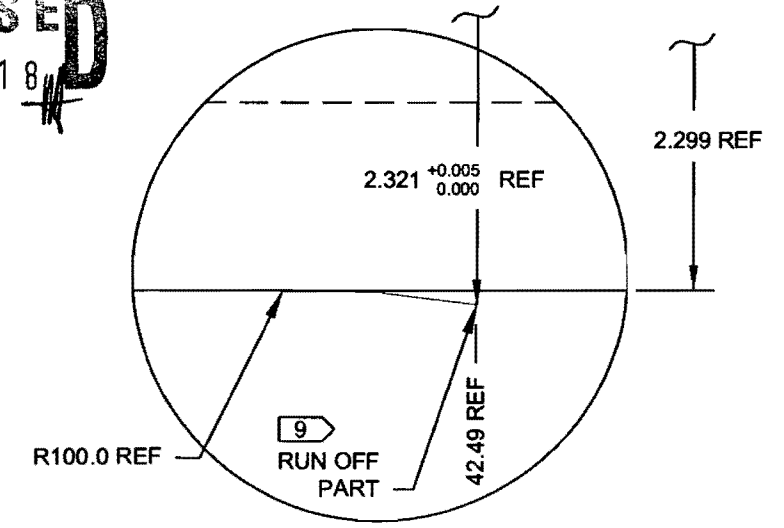
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2011-01-18



**DETAIL C:
CROSSTUBE CUFF** C8-4
SCALE 3X



**DETAIL E:
CUFF TRANSITION** A5-4
NOT TO SCALE



**DETAIL D:
TAPER RUN-OFF** C3-4
NOT TO SCALE

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